



STATE OF UTAH  
NATURAL RESOURCES & ENERGY  
Oil, Gas & Mining

PG-2  
Scott M. Matheson, Governor  
Temple A. Reynolds, Executive Director  
Cleon B. Feight, Division Director

4241 State Office Building • Salt Lake City, UT 84114 • 801-533-5771

July 21, 1982

Mr. James W. Godlove  
Director of Environmental Affairs  
White River Shale Oil Corporation  
Suite 500, Purdential Building  
115 South Main Street  
Salt Lake City, Utah 84111

Attention: Ralph DeLeonardis

RE: Comments on WRSOC Response to  
Division Review Letter  
White River Shale Oil Corp.  
White River Shale Project  
ACT/047/017  
Uintah County, Utah

Dear Mr. Godlove:

Please find enclosed comments addressing the WRSOC July 13, 1982 response to the Division review letter of June 30, 1982. These comments indicate which comments are adequate, speak to additional informational requirements or request clarification accordingly.

As you have been informed, it is the Division's intent to recommend tentative approval at the July Board Hearing effective at the time WRSOC has responded to these comments and the staff has determined that these responses comply with the Utah Mined Land Reclamation Act of 1975. Due to the nature of some of these comments, the Division's acceptance of the WRSOC response may be conditioned on the timely submission of additional information.

If we can be of any assistance in the interim, please contact Tom Portle of my staff.

Sincerely,

*for James W. Smith, Jr.*  
JAMES W. SMITH, JR.  
COORDINATOR OF MINED  
LAND DEVELOPMENT

Enclosure

cc: Ron Daniels, DOGM  
Cleon Feight, DOGM  
Carolyn Driscoll, DOGM

JWS/TLP:btb

Board/Charles R. Henderson, Chairman • John L. Bell • E. Steele McIntyre • Edward T. Beck  
Robert R. Norman • Margaret R. Bird • Herm Olsen

COMMENTS ON WHITE RIVER SHALE OIL CORPORATION  
RESPONSE TO DIVISION REVIEW LETTER

ACT/047/017, Uintah County, Utah

1. This response is adequate as stated.
2. This response is adequate as stated.
3. This response is adequate as stated.
4. This response is adequate as stated.
5. Proposed bond currently under review.
6. This response is adequate.
7. Panel outlines on the submitted mylar overlay are unclear. They should either be discussed or indicated on the mylar in order to clarify the Division's understanding. Also, no yearly sequential estimates were indicated on the submittal. Estimates such as ". . . and data will be transmitted to UDOGM as soon as they are available." are not satisfactory. If information cannot be submitted prior to approval of the application, a specific date of information completion should be committed to beforehand.
8. This response is adequate.
9. Will any regrading occur subsequent to mining which will be intended to achieve an approximate premining contour? This concern is yet to be addressed and is also mentioned in item 20.
10. In what direction will terraces as such be sloped? It is indicated that terraces will be flat. How does this fit in with the "water harvesting" approach? In approved cases in the past, terraces have been sloped slightly to the inside. Is there a reason WRSOC prefers not to do this? Please clarify.
11. No estimated material balance has been provided. WRSOC states that "a grading plan has been developed." Why was it not included? It is the policy of the Division to strongly discourage expansion of the disturbed area for borrow unless as a last resort.
12. Any wildlife mitigation plan prepared should be submitted to DOGM as well as the Oil Shale office. A written commitment to this effect should be made.

In accordance with the quote in question 13 "restore the vegetation . . . which will support fauna of the same kinds and numbers . . ." Any riparian habitats which are disturbed should be reclaimed as riparian habitats due to their importance to wildlife. Obviously, areas inundated by the dam would not apply. However, the company could help speed the emergence of riparian vegetation along the edges of the reservoir through some seeding and/or transplanting efforts. This would be a good mitigation technique.

13. The response is adequate as stated in the July 13, 1982 submission.
14. If and when subsidence occurs due to the mining technique, collected data results and mitigation plans (if warranted) should be submitted to the Division for approval.
15. In the response, "prior to construction of the solid waste landfill, trash and refuse material will be transported off the Tracts to a State approved solid waste landfill, probably in Vernal." It should be added that appropriate agreements be made for dumping there. DOGM requests copies.
16. The Division must assume a need for reclamation of raw shale fires on-site for bonding purposes. Assuming Phases II and III do not occur, how will this material be addressed.
17. The value for the pillar size is based on "available geotechnical data" which indicates the rock in these pillars is competent. The data are requested as well as the source.
18. It is suggested that ripped road pavement be placed underground or in shafts or inclines prior to final surface regrading. The Division does not concur with the current project plans to dispose of this material "in or adjacent to the roadbed." An alternative commitment to this should be made by the applicant.
19. The question is not addressed, "how deeply" the concrete foundations will be buried. DOGM needs to evaluate a Phase I abandonment plan. Again, this is necessary in bond computation.
20. The DOGM requests the grading maps to look at the spent shale disposal areas and cross-sections as well as expected overall postmining contours. Did not address dam cross sections. Again, bond cannot be finalized without this information. Detailed plans have already been requested.
21. WRSOC should submit stability data on the spent shale material prior to, or with the proposal to eliminate the embankments.
22. (a) Response is adequate as stated.  
(b) Response is adequate as stated.

(c) Response is adequate as stated.

23. Toxicity is intended to address not only acidity and alkalinity but also salinity and possible trace element problems. If information is available regarding these concerns, please provide it to DOGM. If not, a program aimed at adequately sampling and testing various materials brought to the surface shall be developed.
24. This response is adequate.
25. Please answer the question to the best of your knowledge. Bond costs have been computed by the applicant. In the absence of this information, the Division cannot appraise these costs relevant to bonding.
26. This response is adequate.
27. DOGM still requires a specific numerical standard for revegetation prior to initiation of mining. Since four habitat types, with varying percentages of natural vegetative cover, will be disturbed, the standard for general disturbed areas may be an average figure.

Specific vegetation techniques and standards for the waste rock pile may be submitted at a later date as indicated in the answer to question 30. A commitment to provide DOGM with any annual reports or publications that are developed from such studies as part of the Annual Operations and Progress Report is needed.

28. There is a disagreement here as to when monitoring will be conducted (semi-annually or quarterly). Also the monitoring manual does not seem to discuss revegetation monitoring specifically. Will a separate plan for monitoring revegetated areas need to be developed for the Oil Shale Office? If so, DOGM would like a copy. If not, DOGM needs a specific monitoring plan detailing specific methods that will be used to monitor revegetation, and a specific discussion of statistical comparisons to be made between revegetated areas and natural vegetation communities. This should be submitted prior to final permit approval.
29. Assuming the forthcoming response to #27 is adequate, this will no longer be of concern.
30. The response is adequate provided updates are made available to the Division in the Annual Operations and Progress Report.
31. The response is adequate provided updates are made available to the Division in the Annual Operations and Progress Report.
32. Specific plans for use of species in the reclamation species mix (i.e., planting rate, locations, treatments) should be submitted to DOGM prior to final permit approval.

33. Is the seed rate for Pure Live Seed? What is the biological basis for the planting of transplants during the fall as opposed to spring?
34. In the general comments about reclamation activities, sealing of the shafts is not mentioned. This should be included.
35. There is a disagreement here as to when monitoring will be conducted (semi-annually or quarterly). Also the monitoring manual does not seem to discuss revegetation monitoring specifically. Will a separate plan for monitoring revegetated areas need to be developed for the Oil Shale Office? If so, DOGM would like a copy. If not, DOGM needs a specific monitoring plan detailing specific methods that will be used to monitor revegetation, and a specific discussion of statistical comparisons to be made between revegetated areas and natural vegetation communities. This should be submitted prior to final permit approval.
36. The decommissioning plan which includes details on the runoff retention pond, the shale fines leachate collection pond and the spent shale runoff and leachate collection pond will not be addressed until it is prepared for the Oil Shale Office. At that time, variances will be requested. This is only acceptable to DOGM if the Board of Oil, Gas and Mining accepts it.
37. No approval for work in these areas can be issued prior to the completion of adequate maps and plans.
38. It is not possible to judge the validity of the applicant's claim that nine inches of soil is available for the entire 100 acre disturbance from the information provided.

The depth of topsoil should be evaluated according to each specific area on the color-coded map E-04-E-1 submitted June 8, 1982. What were the figures in the June 8 letter referring to--which areas are included in the 39 acres? Please delineate. A breakdown of soil disturbance, its relationship to soil type depth, volume retrievable as compared to volume necessary to reclaim each area has not yet been provided.

The applicant has not answered the question regarding the relationship of surveyed areas to future spent shale disposal areas.

It may be possible to address the bulk of the processed shale site in the manner proposed. The applicant has not answered the question regarding approximate soil depth and volume associated with the reclamation of processed shale ore terraces.

Typo - 45,000 cu yds not feet.

39. Where is Attachment 4?

(a) The response is adequate.

(b) It is necessary to define just what degree of erosion would necessitate additional protection. Also, a Division judgment provision in this decision must be built-in.

(c) As above, a provision for Division input into this process is necessary.

40. Details on test plot objectives, experimental procedures used to make these determinations and a time-table as well as a commitment to keep the Division posted in accord with the Annual Reclamation Report are necessary.